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1 16. The method of claim 14, wherein the header section further includes another
2 subset of the header marking regions indicative of a tuning pattern usable for defining
3 image-distortion characteristics .

1 17. A method of encoding binary data for transmission over an image data channel,
2 comprising:
3 encoding the binary data into a linear matrix image having image attributes which
4 ensure that a transformed linear matrix image produced after the transmission over the
5 image data channel is decodable so as to reconstruct the binary data from the transformed
6 linear matrix image; and
7 electronically storing the linear matrix image as an image file.

1 18. A method of encoding binary data for transmission over an image data channel,
2 comprising:
3 identifying image-distortion characteristics of the image data channel;
4 analyzing the image-distortion characteristics so as to define attributes of an
5 encoded linear matrix image, the attributes defined such that a transformed linear matrix
6 image formed by distorting the encoded linear matrix image according to the image-
7 distortion characteristics is reconstructable into the linear matrix image; and
8 encoding the binary data into the encoded linear matrix image having the
9 attributes.

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1 19. A method of recovering binary data encoded in an encoded linear matrix image
2 from a received linear matrix image received over an image data channel, comprising:

3 analyzing a header section of the received linear matrix image to determine image-
4 distortion characteristics of the image data channel;

5 decoding the header section according to the image-distortion characteristics so as
6 to recover at least one encoding parameter, the at least one encoding parameter previously
7 used to encode the binary data; and

8 decoding a data section of the received linear matrix image according to the at
9 least one encoding parameter so as to form recovered binary data.

1 20. The method of claim 19, further comprising:

2 recognizing a detection key in the header section.

1 21. The method of claim 19, wherein the analyzing further comprises:

2 comparing a tuning pattern portion of the header section to a predetermined tuning
3 pattern to determine the image-distortion characteristics.

1 22. The method of claim 19, further comprising:

2 utilizing the recovered binary data.

1 23. The method of claim 22, wherein the binary data includes a firmware upgrade

2 for a printing apparatus, and wherein the utilizing further comprises installing the firmware

3 upgrade in the printing apparatus.

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1 24. The method of claim 19, further comprising:
2 segregating the received linear matrix image from other channel data received from
3 the image data channel.

1 25. The method of claim 19, wherein the at least one encoding parameter is
2 selected from the group consisting of a number of color channels, a safe image width, a
3 safe image height, a minimum X block size, a minimum Y block size, a minimum color
4 offset, a minimum color value, and a maximum color value

1 26. The method of claim 19, wherein the binary data encoded in the encoded linear
2 matrix image is encrypted and wherein the at least one encoding parameter includes an
3 encryption key, further comprising:
4 decrypting the recovered binary data using the encryption key.

1 27. A method of sending binary data over an image data channel, comprising:
2 encoding the binary data into an encoded linear matrix image;
3 transmitting the encoded linear matrix image over the image data channel; and
4 decoding the received linear matrix image to recover the binary data.

1 28. The method of claim 27, wherein the transmitting includes distorting the
2 encoded linear matrix image to form a transformed linear matrix image, and wherein the
3 decoding includes decoding the transformed linear matrix image.